

Patent Abstracts of Japan

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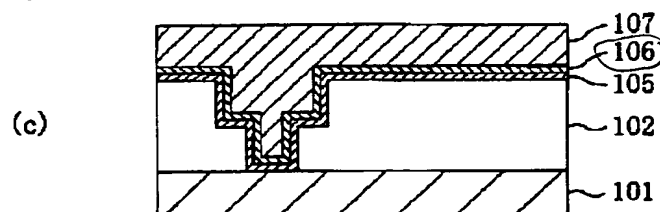
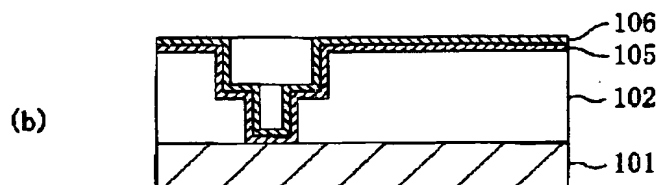
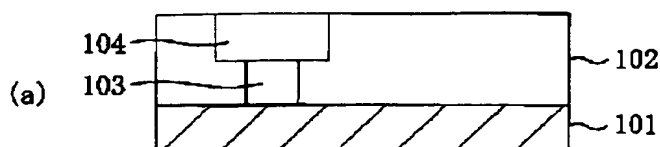
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TITLE : MANUFACTURE OF
SEMICONDUCTOR DEVICE



ABSTRACT : PROBLEM TO BE SOLVED: To provide a reliable semiconductor device that has buried wiring with superior electromigration resistance.

SOLUTION: A contact hole 103 and a recessed groove 104 for wiring are formed on an interlayer insulation film 102 being deposited on a semiconductor substrate 101, and a TiN/Ti film 105 being used as a diffusion prevention film is formed on the wall surfaces of the contact hole 103 and the recessed groove 104. A copper alloy film 106 made of Cu-Sn alloy, Cu-Mg alloy, or Cu-Zr alloy is deposited on the TiN/Ti film 105 by the sputtering method, and a copper film 107 is deposited on the copper alloy film 106 by the CVD method or the plating method. By heat treatment, Sn, Mg, or Zr contained in the copper alloy film 106 is diffused into a copper film 107 for forming the copper alloy film where the Sn, Mg, or Zr is contained in Cu, the copper alloy film is subjected to the CMP method, and contact consisting of the copper alloy film where the Sn, Mg, or Zr is contained in the Cu and buried wiring are simultaneously formed.

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